

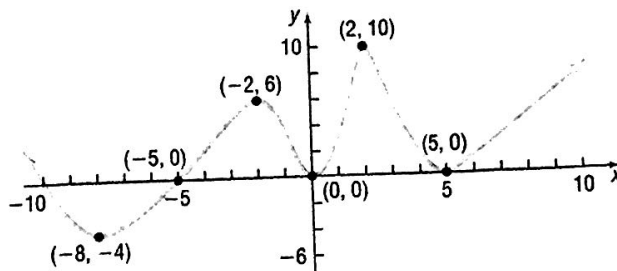
23 Properties of Functions

Name _____

Date _____

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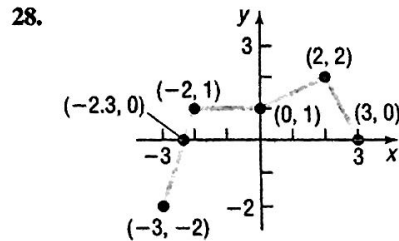
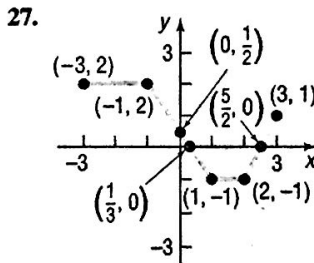
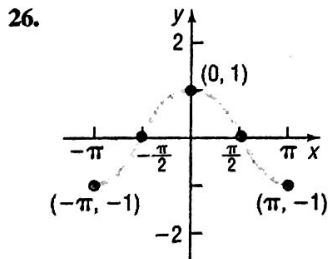
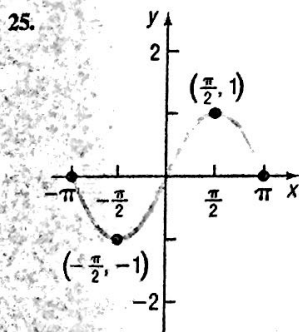
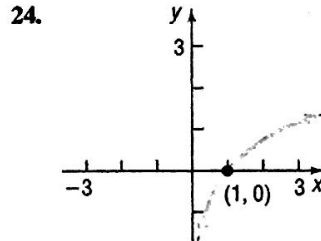
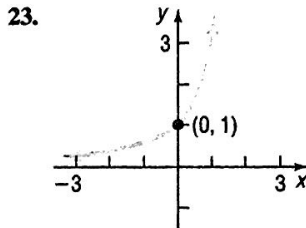
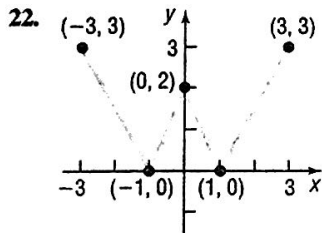
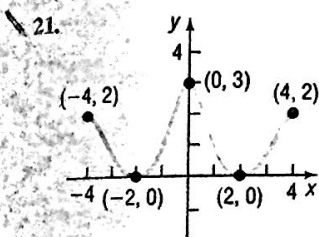
In Problems 11–20, use the given graph of the function f .



11. Is f increasing on the interval $(-8, -2)$?
13. Is f increasing on the interval $(2, 10)$?
15. List the interval(s) on which f is increasing.
17. Is there a local maximum at 2? If yes, what is it?
19. List the numbers at which f has a local maximum. What are these local maxima?
12. Is f decreasing on the interval $(-8, -4)$?
14. Is f decreasing on the interval $(2, 5)$?
16. List the interval(s) on which f is decreasing.
18. Is there a local maximum at 5? If yes, what is it?
20. List the numbers at which f has a local minimum. What are these local minima?

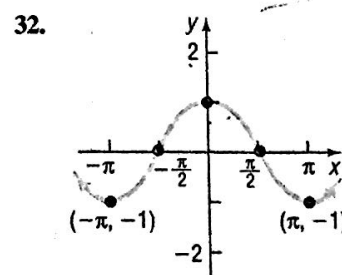
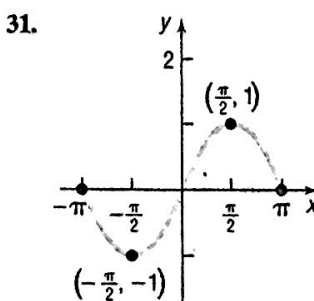
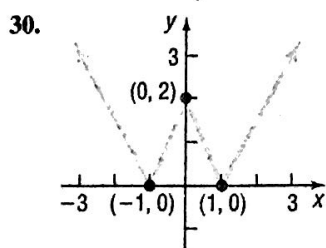
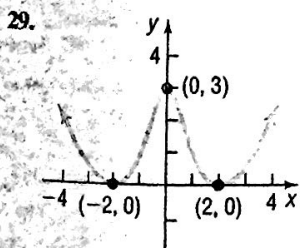
In Problems 21–28, the graph of a function is given. Use the graph to find:

- (a) The intercepts, if any
- (b) The domain and range
- (c) The intervals on which it is increasing, decreasing, or constant
- (d) Whether it is even, odd, or neither



In Problems 29–32, the graph of a function f is given. Use the graph to find:

- (a) The values, if any, at which f has a local maximum. What are these local maxima?
- (b) The values, if any, at which f has a local minimum. What are these local minima?



In Problems 33–44, determine algebraically whether each function is even, odd, or neither.

33. $F(x) = 4x^3 + x$

34. $f(x) = 2x^4 - x^2$

35. $g(x) = -3x^2 - 5$

36. $h(x) = 3x^5 + 5x$

37. $F(x) = \sqrt[3]{x}$

38. $G(x) = \sqrt{x}$

39. $f(x) = x + |x|$

40. $f(x) = \sqrt[3]{2x^2 + 1}$